

What is claimed is:

1. An image forming apparatus comprising:
an image forming unit including an image carrier
disposed to be exposed to light to have a latent image
5 formed thereon, an electrostatic charger that charges
said image carrier to a predetermined polarity, a
developing device that visualizes the latent image
formed on said image carrier to form a visible image,
and an endless belt onto which the visible image is
10 transferred;

a plurality of image adjusting devices that adjust
image forming conditions of said image forming unit,
said image adjusting devices including a first image
adjusting device and a second image adjusting device;
- 15 a detection pattern forming device that controls
said image forming unit to form predetermined detection
patterns on said endless belt;
- 20 a detecting device that detects the detection
patterns formed on said endless belt and a quantity of
reflection light from said endless belt; and

a correction device that corrects the detection
patterns detected by said detecting device based on the
quantity of reflection light from said endless belt
detected by said detecting device;
- 25 wherein:

said first image adjusting device adjusts one of
the image forming conditions of said image forming unit

based on the corrected detection result of the
detection patterns;

 said second image adjusting device adjusts another
 one of the image forming conditions of said image
5 forming unit; and

 said detecting device detects the quantity of
 reflection light from said endless belt in timing
 synchronous with the adjustment of the other one of the
 image forming conditions by said second image adjusting
10 device.

2. An image forming apparatus according to claim
1, wherein said detecting device detects density
patches formed on said endless belt as the
predetermined detection patterns, and said first image
15 adjusting device adjusts the one of the image forming
 conditions of said image forming unit based on the
 detected density patches, to adjust density of an image
 to be formed.

3. An image forming apparatus according to claim
20 2, wherein said first image adjusting device carries
 out one of image density control that maintains
 respective maximum densities of a plurality of
 predetermined colors constant and image density control
 that maintains gradation characteristics of halftone
25 linear with respect to an image signal obtained by
 reading an image on an original.

4. An image forming apparatus according to claim

1, wherein said second image adjusting device comprises a device that rotates said endless belt, and a device that forms images on said endless belt at locations other than locations at which the predetermined
5 detection patterns are formed.

5. An image forming apparatus according to claim 2, wherein said second image adjusting device comprises an image writing position adjusting device that adjusts a writing position for an image.

10 6. An image forming apparatus comprising:
an image forming unit including an image carrier disposed to be exposed to light to have a latent image formed thereon, an electrostatic charger that charges said image carrier to a predetermined polarity, a
15 developing device that visualizes the latent image formed on said image carrier to form a visible image, and an endless belt onto which the visible image is transferred;

a detection pattern forming device that controls
20 said image forming unit to form predetermined detection patterns on said endless belt;

a detecting device that detects the detection patterns formed on said endless belt and a quantity of reflection light from said endless belt;

25 a correction device that corrects the detection patterns detected by said detecting device based on the quantity of reflection light from said endless belt

detected by said detecting device; and
an image adjusting device that adjusts at least
one image forming condition of said image forming unit
based on the corrected detection result of the
5 detection patterns;

wherein said detecting device detects the quantity
of reflection light from said endless belt in timing
different from timing in which the at least one image
forming condition is adjusted by said image adjusting
10 device.

7. An image forming apparatus according to claim
6, wherein said detecting device detects density
patches formed on said endless belt as the
predetermined detection patterns, and said image
15 adjusting device adjusts the at least one image forming
condition of said image forming unit based on the
detected density patches, to adjust density of an image
to be formed.

8. An image forming apparatus according to claim
20 7, wherein said image adjusting device carries out one
of image density control that maintains respective
maximum densities of a plurality of predetermined
colors constant and image density control that
maintains gradation characteristics of halftone linear
25 with respect to an image signal obtained by reading an
image on an original.

9. An image forming apparatus according to claim

6, wherein the timing different from the in which the other one of the image forming conditions is adjusted is timing in which said endless belt is rotating and at a same time images are formed on said endless belt at 5 locations other than locations at which the predetermined detection patterns are formed.

10. An image forming apparatus according to claim 1 or 6, wherein said endless belt is an intermediate transfer belt.

10 11. A program for controlling an image forming apparatus including an image forming unit including an image carrier disposed to be exposed to light to have a latent image formed thereon, an electrostatic charger that charges said image carrier to a predetermined 15 polarity, a developing device that visualizes the latent image formed on said image carrier to form a visible image, and an endless belt onto which the visible image is transferred, the program comprising:

20 a detection pattern forming module for controlling said image forming unit to form predetermined detection patterns on said endless belt;

a first detecting module for detecting the detection patterns formed on said endless belt;

25 a second detecting module for detecting a quantity of reflection light from said endless belt; and

a correction module for correcting the detection patterns detected by said detecting module based on the

quantity of reflection light from said endless belt detected by said detecting module;

wherein:

5 said first image adjusting module adjusts one of the image forming conditions of said image forming unit based on the corrected detection result of the detection patterns;

10 said second image adjusting module adjusts another one of the image forming conditions of said image forming unit; and

15 said detecting module detects the quantity of reflection light from said endless belt in timing synchronous with the adjustment of the other one of the image forming conditions by said second image adjusting module.

12. A program for controlling an image forming apparatus including an image forming unit including an image carrier disposed to be exposed to light to have a latent image formed thereon, an electrostatic charger that charges said image carrier to a predetermined polarity, a developing device that visualizes the latent image formed on said image carrier to form a visible image, and an endless belt onto which the visible image is transferred, the program comprising:

25 a detection pattern forming module for controlling said image forming unit to form predetermined detection patterns on said endless belt;

a first detecting module for detecting the detection patterns formed on said endless belt;

a second detecting module for detecting a quantity of reflection light from said endless belt;

5 a correction module for correcting the detection patterns detected by said first detecting module based on the quantity of reflection light from said endless belt detected by said second detecting module; and

10 one image forming condition of said image forming unit based on the corrected detection result of the detection patterns;

wherein said second detecting module detects the quantity of reflection light from said endless belt in
15 timing different from timing in which the at least one image forming condition is adjusted by said image adjusting module.

13. An image forming apparatus comprising:

an image forming unit including an image carrier
20 disposed to be exposed to light to have a latent image formed thereon, an electrostatic charger that charges said image carrier to a predetermined polarity, a developing device that visualizes the latent image formed on said image carrier to form a visible image,
25 and an endless belt onto which the visible image is transferred;

a detection pattern forming device that controls

said image forming unit to form predetermined detection patterns on said endless belt;

a detecting device that detects the detection patterns formed on said endless belt and a quantity of 5 reflection light from said endless belt;

a correction device that corrects the detection patterns detected by said detecting device based on the quantity of reflection light from said endless belt detected by said detecting device; and

10 an image adjusting device that adjusts at least one image forming condition of said image forming unit based on the corrected detection result of the detection patterns;

wherein:

15 said image adjusting device includes an image writing position adjusting device that adjusts a writing position for an image; and

20 said detecting device detects the quantity of reflection light from said endless belt in timing different from timing in which the at least one image forming condition is adjusted by said image adjusting device, by detecting the quantity of reflection light upon turning-on of power of the image forming apparatus or in synchronism with the adjustment of the writing 25 position for an image.